

ABSTRACT

The present invention provides a solid polymer electrolyte fuel battery cell comprising a solid polymer electrolyte membrane, a fuel electrode and an oxidant electrode, the both electrodes being disposed on both sides of the membrane, and a pair of current collectors disposed outside the electrodes, wherein a water-retaining material comprising fibers at least the surface layer of which contains a metal oxide is combined and integrated with at least the fuel electrode among the solid polymer electrolyte membrane, the fuel electrode and the oxidant electrode. The solid polymer electrolyte fuel battery cell can be operated with stability without use of complicated auxiliary devices such as a humidifier.